FROM THE EDITOR'S DESK

When I finally assembled last month's newsletter for the printer and ended up with 28 pages of all-original, all-JACG material, I got a very good feeling. First, it was great to see the membership responding to my many months of pleading for articles. And it is nice to see that not only officers and the regulars doing their thing, but to get articles from authors the newsletter hasn't heard from in awhile. So, thanks to the membership and all the authors for plugging along and supplying us with great articles to read.

But there is a more significant thing to be noticed about 28 pages of original Atari material in 1991. If you listen to all the doom-sayers and nay-sayers, you would think there is nothing possibly left to be written about the Atari line of home computers. And all the Atari magazines folding would seem to indicate that even if there was anything left to write, that there was no one left to read it.

But the JACG puts the lie to those opinions each and every month. In the meetings with the interesting demos and door prizes, in the newsletter that can produce 28 pages of material using only local sources, on the BBS with new files becoming available all the time. So stick with us, depsite what they say, there's still plenty of life in those ol' Atari gals yet.

IN THIS ISSUE ....

CALENDAR OF EVENTS

NEXT MEETING:

August 10th, 1991

10:00 AM TO NOON

PRESIDENTIAL PONDERINGS II
by Joe Kennedy, President, JACG

Many, many thanks to those members who took the time and effort to bring all their equipment and put on a demo at the annual Atari Safari! I sure hope Dave's wife left him back in the house when she found out how much extra room she has when all his equiptment is gone.

WIN $10,000!!

This is from the mail but it's not Publisher's Clearinghouse (that should be obvious from the paltry amount). Instead it comes from Johns Hopkins University. They are holding a contest for computer programmers who have written programs that would aid disabled people. If you have such a program feel free to enter. For more information write:

Computing to Assist Persons
with Disabilities
P.O. Box 1200
Laurel, Maryland 20723

Contest deadline is August 23, 1991.

More mail. If you use Deskjet black ink cartridges don't throw them away anymore. Now you can have them refilled for only $8.00 per cartridge. Dave, is that a good price? I don't know as I still use my Epson. If you're interested contact:

Beth Kinnmark
1860 Sherman Ave,. #2-NE
Evanston, IL 60201-3732
Tel. 708 475 5367

And tell 'em JACG sent ya'.

By now you might have noticed that the BBS is down. That's due to a technical problem with the Hard drive. The problem is soon to be solved and when it is you'll find that we have new BBS software. Hope you like it. Let us know.

Speaking of the BBS it is to be found listed in the Summer Issue of ONLINE ACCESS magazine. This time they got the name right!

For all those people who tell me "Gee, I can't find any software for the Atari 8 bit machines." listen up! Take pencil, pen or crayon in hand and write to:

B&C ComputerVisions ·
3257 Kifer Road
Santa Clara, CA 95051

Ask them for their Summer 1991 catalog. In it you'll find well over forty pages of advertising for 8-bit ATARI software - everything possible for your machine. If you're a 24 bitter, as Dave puts it, you doubly lucky because you'll find about eight pages of ST advertising also. So if you want 8 bit software, here's your chance to get it.

Let's end it this month with a paraphase from Ed Koch, you remember him don't you? "How are we doin'?" Let us know the JACG is NOT a club just for the Board, it's for everybody. If there's something you like, tell us. If there's something you don't like, tell us. If there's something you would like to see but don't, that's right, tell us. It's your club!

Well, I guess I'll try to get this off to Dave A! some other way than normal since the board's still down. See you at the meeting on the 13th!

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8 - BIT FEATURE

8 - BIT VICE PRESIDENT'S REPORT
by Dave Arlington, JACG

Well, July 4th is still ringing in my ears as I write this, but my mind is already turning to planning for September's meeting which I hope will be the first of many annual JACG Family

Meetings. You know, a meeting where you DON'T leave the computer widow or widower at home, and you DON'T get away from the kids for a couple hours.

I know many of our members already make JACG meetings a family affair and bring their kids and spouses every month. The September meeting will be dedicated to these total computing families. Time for the rest of us to get the family involved. We would like to see every member show up and bring the whole family with them. Let's try to fill up that Bell Labs auditorium like the old days.

So what do we have planned for that gala occasion? Well, I plan on bringing up to the board before the July meeting the possibility of springing some of that massive treasury for refreshments (and if that is even allowed in the Bell Labs auditorium). Plus, I can only speak as the representative of the 8-bit side of the JACG, but every youngster who attends the September meeting who has an 8-bit at home will recieve a FREE disk packed with public domain binary games. This, of course, will be in addition to any door prizes that we regularly give away.

What about demos? Well, I want to do something different there as well for the 8-bit demos. What I would like to see is as many short five-ten minute demos as possible and I would like to see them all done, if possible, by parent-child teams or maybe the children alone. If you don't have kids, how about the signifcant other in your life or involving some youngsters from the audience as volunteers?

The whole point of this JACG Family meeting, from my point of view at least, is twofold. First, it is a good way to just share some of the exciting things in your life with your family and a chance to meet new friends and maybe, just maybe, bring a little of that community spirit back to Atari user groups that used to be there in the old days. The other reason I see is

more pragmatic. It would be nice to infuse our younger generation (and I consider the younger generation to be anybody still on the 2-digit side of 100 years old) with the sense that Ataris are still a fun and viable way to while away a Saturday afternoon. That there are still games to be played and that there are still valuable things to be learned every time we sit down to our Atari computers.

So, please, if you only make one meeting this year, bring your whole family down to the September meeting. Please let me know as soon in advance as possible if you would like to demo that day. All you need is a willing partner and 5-10 mniutes of your favorite program of any type. I've already managed to get a firm commitment from 7-year old (by then anyway) Mike A! to do a demo that month. I hope you will join us! Let me know!

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8 - BIT FEATURE

8 - BIT PD LIBRARIAN'S REPORT
by Sam Cory, 8-bit PD Librarian, JACG

ATARI DOES IT AGAIN!!! THE PRICE OF THE PALMTOP HAS BEEN DROPPED BY 25% - joined by Poqet in a limited success market. Experts predict a blood bath in notebook computers starting with Hewlett Packard's new contribution.

Starting with this meeting, Joe Hicswa will report on the disk of the month during the 8-bit librarian's time. Next meeting he will also demo an interesting file from the "BATCH" DOMs. He has kindly offered to examine every file on all of the "BATCH" DOM. We found just offering a raw disk did not sell very well. Now we will know each file works. This means additional cost to the club in time and money. I hope your disk purchases will support the new procedure. If they do not, we will revert, alas, to the past and save time and money. Any suggestions will be appreciated.

Besides Joe Hicswa, another member, Felix Staffaroni, should receive your gratitude for all the time they will spend for you. Felix is an unknown old time member. Been with us since 1983 and never been to a meeting because he lives in Stroudsberg, Pa. He still will be the invisible man working invisibly for you. If you will remember, I wrote about his being a teacher at the Blairstown Elementary school and the 800's they own. I just learned they are in a new program where they will purchase IBM equipment, BUT WILL KEEP ON USING 800'S UNTIL THEY DROP. Who will live that long?

DUMB, DUMB, DUMB, Please accept my appologies for mislabelling the last Ol Hacker's disk as APRIL/MAY. Alas, it was MARCH/APRIL. This month DOM Ol Hacker disk is MAY/JUNE. It has a neat demo.

STAR TREK IS COMING. Well at least power beams. In the next century, they feel all our power will be beamed from sattelites, space stations, or the Moon. Scotty, keep that beam away from me! Think beam slippage = microwaved people - I like rare.

In spite of what I said last month there is an American "ATARI USER". I have been promised a copy. If it comes you will get the info. Speaking of that reminds me (that is what is called a lead in), Page 6 Publishing's "NEW ATARI USER" - from England - is out now with their June/July 1991 issue 50. There the 8-bit is still King. 47 pages out of 74. Just to whet your appetite, here are the CONTENTS:

8-bit

VBI SCROLL smooth scrolling messages.
THE A-Z OF GOLDEN OLDIES.
WRITING ADVENTURES PART 3 including a full type in adventure.
BUDGET DELIGHTS
PAGE 6 WRITER full word processor.
INVADERS classic in Turbo Basic.
TUTORIAL TIME repair a power pack.
THE SOFTWARE REVIEWS Yogi's Great Escape, Feud, International Karate,

Sidewinder 2, BMX Simulator, Castle Top.
DISK BONUS - THE AMULET.
THE ACCESSORY SHOP.

16-bit

JOHN'S JOTTINGS.
WINNERS? reviewed.
CHUCK ROCK reviewed.
MAKING MUSIC guide to music on the ST.
MASTER TIME reviewed.
THE DUEL and Accessory Disks.
ALPHA WAVES weird stuff.
PAUL RIXON'S PD WORLD.
SAMPLE THIS! sound sampling.
MIG-29 FULCRUM
ST GAMES The Killing Game Show, Prosoccer 2190, Locomotion, Super Monaco GP, Skull and Crossbones, Hard Drivin' 2
THE STOS COLUMN
LOST PATROL reviewed.
B.A.T. reviewed.

PAGE 6 supports a disk covering magazine contents. NOTICE the disk bonus is 8-bit, an Adventure Game. Both 8, 16 bit are supported by addittional disks. 8-bit = 160, 16-bit = 511. That sure shows where the activity lies. Also, there are a lot of ads for machine parts, books, files on disk and a surprising amount of files on CARTRIDGE.

Have a wonderful vacation filled summer! From the mind of SAM CORY, JACG 8-bit Librarian.

GENERAL FEATURE

JUNE MEETING NOTES
by Joe Hicswa, JACG

June 9 was a beautiful travel day to the ATARI SAFARI sponsored by JERSEY ATARI COMPUTER GROUP during their monthly meeting at AT&T BELL LABS in Murray Hill, N.J.

Upon my arrival, I noticed many new faces among the flea market vendors and shoppers. Tables were enticingly filled with wares. (NOTE: Only JACG

members are permitted to sell ATARI wares. There is no charge).

One vendor offered a used system for 150 dollars: 800 computer, two 810 drives, 6 plug outlet, joy stick, manuals, discs, etc. It was sold! (An affordable way for neophytes to learn the power and potential of ATARI computers).

Besides purchasing my monthly 8-bit disks of the month (DOM) I picked up six used commercial disks for five dollars. There were other bargains but I had to prepare my Safari demo. (I hope those vendors return with their unsold goodies).

The SAFARI began after a quick run through question/answer period, officer reports, and door prize distribution.

The SAFARI trail wended by two 16-bit demos and three 8-bit demos that enlightened us:

16-bit Librarian John Dean expertly showed and explained the process he uses to examine, classify, and add new programs to our ST library. He answered questions about setting up a similar process for a home library list. John gets public domain (PD) programs from ST INFORMER MAGAZINE, ST. WORLD, CURRENT NOTES, AIM (ATARI INTERFACE MAG.), as well as JACG MEMBERS such as: David Noyes, Mark Rotton, The Tanahills, J. Roborecky, etal, just to mention a few. If you have any to donate, pass them on to John.

16-bit V.P. Mr. David Noyes proudly showed some fantastic things he does with his MEGA SYSTEM: MEGA ST4, MEGAFILE 30, PS 3000 MONITOR, HEWLETT PACKARD 500 printer, a mouse and pad. He graciously permitted versatile John King to give a mini demo of Universal Item Selection III, an outstanding, raptuous, utility program with window menus.

Along the 8-bit trail was Editor/8-Bit V.P. David Arlington

showing comparisons between several languages: LOGO, TURBO BASIC, ACTION, "C", ASSEMBLY, ETC. David works with many languages; he will answer just about any of your programming language questions. (Like getting a free consultation. Another bonus for being a JACG member).

Game expert, MR. Ed Salvesen gave brilliant displays of: PACMAN, MS. PACMAN, DONKEY KONG, Q-BERT, MR. DO, and other arcade type games. Their clarity, speed and colors with an 8-bit ATARI are marvelous. Mr. Salvesen might be considered a champion player. With Mr. DO he achieved level 74. (Any challengers? See Ed at our next meeting). If you game experts get together for a round-robin competition, let us know about it in an article to our editor.

Last 8-bit SAFARI stop was FIRST XLENT WP (TM) that attracted and impressed several members. (EDITOR'S NOTE: Modestly, Joe Hicswa forgets to mention that he was responsible for this informative demo!) This inexpensive, easy-to-learn, easy-to-use word processor program is menu friendly with alterable defaults. It contains text-mode icon window, 4 help screens, printer-driver file for non-ATARI printers, even prints foreign characters and picture/graphics. Three buffer text windows are available. First Xlent has an 80 column display before printing hard copy. What you see is what you get. If you don't like it, you can reformat before sending it to the printer.

I do a lot of writing: computer club newsletters, magazines, newspapers, as well as letters to local, state and federal officials. This W.P. helps me write programs in BASIC and prints documents off our club library disks. First Xlent has no spell checker. Lengthy documents are checked by ATARI WRITER PLUS dictionary. If you seek an affordable, convenient word processor, give First Xlent a chance. Buy your copy from a dealer listed in our club newsletter or send $29 to:

XLENT SOFTWARE
BOX 5228
SPRINGFIELD, VA. 22150

XLENT SOFTWARE is a staunch supporter of ATARI users.

ATARI SAFARI computers and programs impressed me. They handle utilities, crunch numbers, perform home/business applications, then teach and amuse us during our leisure hours. ATARI even child sits for us. There's the right ATARI system and programs available for each of our particular needs and wants. All affordable prices. WOW!

My thanks to Membership Chairman, Mr. Michael Hochman who provided the following list of New Members and Renewals:

NEW MEMBERS:

Karna Johnsen	Bedminster
Gary Johnsen	Bedminster
Sonny LaBrunda	Randolph
Joseph Manzella	Brooklyn, N.Y.
R.E. Rodriquez	Randolph

RENEWALS:

William T. Harrison	Mountain Lakes
Steve Newfield	Somerset
Sam Cory	Blairstown
Robert S. Zoppi	Verona

See you August 10. In the meantime write a paragraph or two for the newsletter -- submit a copy of something you've read. Show us a brief demo of your pet program at our next meeting.

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8 - BIT FEATURE

DO YOU 'DO'?
A Mr. Do Strategy Guide
by Ed Salvesen, JACG

Maybe you thought I was trying to say, "How do you do!". I wasn't! I want to know if you play Mr. Do by DataSoft!

Steve Panak, in the September 1985 ANALOG, gave it a 'thumbs up'. He found the game "addictive, and that's a major consideration" to any game reviewer! However, omitted from hsi review were some very salient game hints! I hope to correct that situation now!

Similar to DIG DUG, your little 'clown' creature travels 'mole style', digging his was along underground trying to 'lap up' any foods that appear on the screen. Chasing are an ever increasing number of little red monsters whose sole job is to eliminate your little clown! There are five strategically placed apples on each screen, waiting for a chance to fall onto (and kill) any creature that happens by them. No creature may go through an apple but certain creatures may eat them!

In theory, since you may win an unlimited number of new men, you'll be able to play forever, but as you progress to deeper levels, you are slowed down dramatically (same as Ms. Pacman) and there are no escapes! In the center of each screen lies a bonus food, but there's a catch! As you take it, you release five more monsters (1 BOSS, 4 HENCHMEN), a nice wrinkle as any of them may eat an apple allowing the rest to stay on your tail!

Now for some game hints:

Mr. Panak erred when he said BOSSes and HENCHMEN cannot be crushed by falling apples. If you start an apple falling such that it strikes its victim before he can FACE it, he will be crushed!

While grabbing the center food can have some mixed blessings, if you are close to capture by any red meanies, grabbing that treat will freeze them until the BOSS or the four HENCHMEN are eliminated. Frozen, they can still be killed by falling apples!

If you can grab an entire cherry grove (8 cherries) in one continuous motion (no pauses), you'll earn a 500 point bonus.

As you eliminate regular monsters at every level, the time it takes for your powerball to recharge increases, but, when HENCHMEN or BOSSes are the victims, recharging is noticably shorter constantly whether you are on screen four or sixty-four!

As you cross every 5000 threshold, a BOSS (without HENCHMEN) is released if he is one of the letters not collected toward your extra man. (If you then grab the center food, HENCHMEN spring from the BOSS.)

Instructions say (and Mr. Panak never mentioned this in his review) that lucky diamons (worth 8000 and moving you to the next screen if you grab them) appear in some fallen apples. Whenever I can drop an apple such that it falls BEFORE a HENCHMAN has wandered underneath and then crashes through that 'weak' floor, (you'll know what I mean) and crushes THAT HENCHMAN, I seem to always get 'lucky' diamonds in the residue!

One final note: Not to burst your bubble, but since it takes about one hour of play to reach 1,000,000 points, I can save you some disappointment. There's no room for the seventh digit! The game wraps around from zero!! Good luck!!

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8 - BIT FEATURE

DIARY OF A FLIGHT SIMULATOR PILOT
Part 6
by Dave Arlington, JACG

NOTE: For those just joining this series, this is one of a series of articles detailing a recreation of a flight from Santa Monica, California to Cleveland, Ohio using Flight Simulator II and the SubLogic Scenery Disks. This month's leg of the trip is from El Paso, Texas to Pecos City, Texas. The Scenery Disk used is Scenery Disk 2.

For those who want to fly along, the parameters for this month are NORTH: 13423, EAST: 9801, ALTITUDE:

3956, HEADING: 76, SEASON: 2, HOUR: 12. This setup puts the pane sitting in the middle of Runway 8 at El Paso International Airport.

In case you were following this series, you might be wondering where it has been the last 6 months. Well, I hate to say it, but my plane crashed the first time I tried today's flight and I was laid up in the hospital for the last 6 months. Of course, it was a simulated crash and a simulated hospital and the only things in intensive care were my ego and my pride. However, that crash taught me an important lesson about the flight simulator that I will share with you today. But that comes later. First, I'll teach you a lesson about real airplanes and how they work in the simulator.

El Paso is at almost 4000 feet altitude and our destination airport at Pecos City is at 2600 feet altitude. So, for now a good plan is to take off and try to level out straight and true at 6000 feet in the air. As you take off, look out the back windows at El Paso, the Rio Grande river, and the by-now familiar Route 10 heading off to the south. (If you recall how many times we've seen this particular highway on this simulated flight starting in California, you might be interested to hear that this is the last leg of the trip that we'll ever see it. There will be a fork in the highway up ahead near Pecos City and the south brach is Route 10 and the north branch that we will be following is Interstate Route 20 which stretches from here near Pecos all the way to Florence, South Carolina.

Have you leveled off at 6000 feet yet? I'll give you some clues on how to do that in a minute. First, tune in the Salt Flat VOR at 113.0 and get on a heading towards it. (Mine was about 86 degrees.) Salt Flat is a little town in Texas which is not simulated on this disk, near some salt lakes which are also not simulated, which are very near Guadalupe Peak, the highest point in

Texas, which unfortunately is also not simulated. There is a little airport out there at Dell City, Texas which is simulated but it is so small, that on our heading, if you don't look out the right window at exactly the right moment, you'll most likely miss it.

So, to occupy your time, here's how to cruise steady at 6000 feet. In the simulator, and in real aircraft, two of the most important factors that determine the altitude your plane will like to cruise along at are the amount of throttle and the amount of pitch your airplane has. (Pitch is the term for how far up the nose of your plane is tilted.) As you go higher and higher in altitude, you have to fiddle more and more with the pitch and your throttle to find the right combination to fly level and straight at 6000 feet. (Or any other altitude, for that matter.) With my throttle at 2250 RPM and a speed of 130 Knots Indicated AirSpeed (KIAS), the Elevator setting in the Editor reads 37887. With my throttle at 1850 and a speed of 115 KIAS, the Elevator setting in the Editor reads 38911. Both of these two combinations give me pretty level flight at 6000 feet.

Which is better? Well, the first combination uses more fuel faster, but has a higher airspeed which gets us to our destination faster. Since we are not paying for the fuel and we don't have to worry about burning the engine out, use the first combination. Even at 130 KIAS, this flight took me an hour and 20 minutes. The second combination, in addition to saving fuel and wear and tear on the engine, would be better for sight-seeing.

As you pass over Salt Flat and hopefully get a glimpse of the Dell City airport, tune your NAV to the Pecos City VOR at 111.80. It won't show up for awhile, but when it does you will have to make only a very slight course correction to get a heading towards it. (I had to turn to a heading of 92.)

On this second half of this leg, let me tell you why I crashed the first time I tried this flight, and how you can avoid it. It seems to be something flukey about the simulator program itself and only seems to happen on certain Scenery Disks. It has something to do with how the program determines how far off the ground you are. Here is what happens:

When you start in one place with a high altitude and fly a long distance to a place with a significantly lower altitude, the simulator program does not seem to register the change in altitude when it should. For instance, the first time I tried this flight, I started letting down from 6000 feet to 3500 feet (which would put me 1000 feet above the ground at Pecos City) about 20 miles out from the city. Well, imagine my surprise when the plane crashed when I got to 4000 feet.

However, something about the airport itself always seems to cause the simulator to register the correct altitude. So, to land here at Pecos City without crashing, stay at 6000 feet until you are actually crossing Route 20 to get to the airport. Assuming you were still heaading about 92 degrees, turn to a heading of 130 degrees when the airport is out the front window. As you cross the road, watch the airport out the left window and NOW start letting down to 3500 feet. By the time you get down to that altitude, you should be well past the end of the runway and in a perfect position to make a 180 degree turn to a heading of 310 degrees with plenty of time to line up a perfect landing on Runway 31. Without crashing, I might add.

Next time, a very short night flight to Monahans, Texas as we cross out of Scenery Disk 2 to Scenery Disk 1.

Noise from the Vice-President
16-bit (ST)

- D. B. Noyes, JACG

SUMMER DOLDRUMS

The summer, with all of its' heat and humidity, has descended upon us with a vengeance! If this summer holds true to those immediately preceding, it would appear that the July and August meetings will be sparsely attended. If previous meetings are a precursor, I would wager that if 90% of those attending were 16 bitters, and the remaining 16-bitters, there would be sufficient demos on the 8-bit side, and yours truly would be one, or one of two, doing the ST demos! I don't know what that signifies...is it above ST'ers to participate at that level? Do ST owners consider themselves to be at such a sophisticated point in computing development that they neither need to actively (and in many cases, even passively) participate in our JACG meetings? I sometimes feel that the flea market is the ST'ers "raison d'etre" relative to the JACG. For sure...I will "beat the bushes" for neither demonstrators nor NEWSLETTER articles. I will leave that to the consciences of our ST members. If you would like to demo ST software/hardware at our meetings...please call me at (908) 852-3165; if you have an article (or more!) for the JACG NEWSLETTER, please get in contact with Dave Arlington, whose phone number and address is listed on the back cover of the NEWSLETTER...the meetings will be only as good as YOU make them!

SUMMER WARNING

Summer is the season for thunderstorms, and associated with these storms is lightning. Many of you, I am sure, use surge protection devices on your power to your computers and peripherals. To a lesser extent, I sure that some of you also surge protect the phone line going into your modems. This type of protection is ideal for those power surges caused by machinery switching on or off, or (up to a certain level) surges caused by the power utility. Be aware, however, that these devices cannot protect your equipment from mother nature. The surges caused by lightning strikes are simply too powerful (a surge protector the size of a Volkswagen "Beetle" probably couldn't withstand the power of some lightning hits. The BEST protection is total disconnection (power and phone). Two years ago my $150.00 modem protected my $7.95 surge protector...it could have been worse, the rest of my system survived! When the thunder begins to roll...pull the plug!

LATEST FROM THE PD WORLD

* Neochrome Master, a PD updated version of the color drawing program
* MDISK 6.0, the latest, enhanced ramdisk plus formatter, plus virus checker, etc.
* Monopoly3, an updated version of the PD version of the classic board game
* Monitor Magic, An accessory for default, amber or green monitor screen
* Uncle Lib 3.5," Uncle" Carl's latest updated disk library utility
* KAOSDESK, an alternative desktop from Germany
* Deadmags, article database for most START and COMPUTE! (ATARI ST specific) magazines-use with Timeworks Database Manager ST
* Addressme, another address utility
* Checkbook2, another checkbook utility
* Colony, a PD clone of MULE (remember?)
* and many others adding up to three double-sided disks of PD and shareware going to John Dean for consideration of inclusion in the JACG ST Disk Library.

...til next month...Dave Noyes

JACGLSEA.237

This is a UTIlity disk

AUTODAT.PRG - Put this in your AUTO folder and the Year, Month, Day and time set in your ST will be displayed at boot up time.

BACKUPST.APP - BackupST is a backup program for the Atari-ST. BackupST writes the hard disk data to floppy disks. BackupST has 3 modes in which it works; creation (backup), listing or extraction (restore). The floppies written by BackupST are in a proprietary format, and are NOT readable by GEMDOS. You need BackupST again to read the floppies. Bfront is a frontend for the BackupST program. This program makes it possible for novice users to use the powerfull posibilities of the BackupST program.

CLOCKS.APP - contains three clock programs new to the JACG ST library. WRLD_CLK.PRG will give you the current time anywhere in the world based on the current time in your time zone. DATETIME.PRG from COMPUTE! will read and allow you to set your internal clock to the current time. DCCLK32.PRG from Double Click is GEM based and displays the time in the screen corner.

CONFIG.APP - Placed in the AUTO folder, this utility configures system variables which normally require the desk accessory CONTROL.ACC.

DESKSW11 - Desk Switch is a versatile and powerful little program, that lets you instantly switch from one desktop setup to another. Desk Switch reads .INF files created with the GEM desktop's 'Save Desktop' function, and sets every parameter saved in the file. It can be run as an ordinary program (by double-clicking from the desktop), or as an "Installed Application" from the desktop or from CodeHead Software's HotWire.

FASTLZH.APP - a self contained program - LHARC does not need to be present to extract files. It is written in 100% Assembly language using Hisoft dev2.

FLU.APP - Familiarity with the appearance of the attacks of known viruses would be helpful in recognizing when one is present. For that purpose, I have provided the program "FLU". It is a demonstration program. It does not contain any of the code present in any virus for the installation of the virus, or the spreading of the virus. "FLU" is absolutely safe. The program can be viewed as a simple novelty, which does some strange display alterations. But by running it, and becoming familiar with the symptoms it displays, you will be capable of recognizing the characteristics of the attack of several current ST viruses.

HOSPITAL.APP - This suite of programs has been developed to detect and prevent the spread of viruses on the Atari ST computer. The programs apply primarily to floppy disk boot sector viruses but some do have a wider application.

MIDISEND.APP - Midisend is a desk accessory that sends a string of MIDI data to a MIDI instrument through the built in MIDI sockets.

PRIV_EYE.APP - Private Eye is a desk accessory that allows you to take a look inside the ST, in a manner of speaking. Some of the information it gives you is obvious, some of it not so obvious, and some may be a surprise.

QCKMNU25.APP - Quick Menu provides an easy to use system for executing applications. With a single click of the mouse any application may be easily executed without the hassle inherent with the desktop and the typing required by a command line interpreter. High and Medium rez.

SENTINEL.APP - Write Error Sentinel watches over disk operations and informs you if there is a 'disk full' error. This is especially useful for ARC602.TTP and FLASH.PRG (when saving from a DO file) as well as with other programs because without SENTINEL you will not be informed of the error. By John Eidsvoog (one of the Codehead boys). L-M-H

SHOTZ_II.APP - Shotz II is an updated version of Shotz. In this updated version, you may now immunize a disk or enable or disable an executable sector. This is handy if you have an executable bootsector that you are not sure of. You can disable it and enable it again without any harm.

STLOADER.APP - This program will load and show you all Prg's on the disk that the program was ran from, then just pick the one you want to run and click on it then on OK and the program will run.

ST_UNZIP.APP - A ZIP file is one which holds much information in a greatly reduced space. Use the ST_UNZIP program to extract compressed files from a ZIP file. An entire ZIP file can be extracted, or a specific file can be delegated to be extracted. Right now this program is mainly used by users of PC-DITTO to extract files faster than PKUNZIP can while running under PC-DITTO.

UNLZH172.APP - UNLZH version 1.72 - A program for extracting LZH archive files. UNLZH combines an easy to use, GEM based interface with high speed extraction routines, to give you a much simpler and much faster way to extract LZH archives. It is a self contained program - you do not need to have LHARC or any 'shell'. It is written in 100% Assembly language, and extracts approximately four times faster than LHARC.

JACGLSEA.238

This is a UTIlity disk

BYTFRE33.APP - Both a Desk Accessory and a Program at the same time! The program will display the

free space on each partition, listing both bytes and Kilobytes and percent used. A total of the same is kept at the bottom of the dialog, and the user may deselect active drives at will, and the current total will be continuously updated. Gem program.

COLORSET.APP - A fast Program that will change the colors in GEM easily. Some programs don't reset the colors properly.

FLMT3S.APP - Floormat III is not a minor upgrade but a completely new program. It has been completely rewritten and sports these new utility features: An embedded custom formatting module. Modify/Change all sector gaps. Change sector sizes (128/256/512/1024 bytes per sector). Skew formatting (greatly increase reading/writing speed). Modify numbers of clusters/fats/directory entries/etc. An embedded virus utility program. Formatting to any number of user selected tracks(1-200"). IBM compatible formats (40 sector/360k,etc). Built in macro's of popular format parameters. Compatibility with all external drives (IE:5.25") UNDO accidental formats ("read docs"). An improved multiple disk formatting interface. Format drives A & B sequentially and un-attended. Disk volume labeling. Improved directory routines. Newly designed D&W file selector box. A much cleaner medium res. support. Note that this is a color only formatter.

HDCHK.APP - HDCHECK (version 1.3) is a hard disk test and analysis program that offers a variety of features for evaluating and benchmarking hard drives. MH

LASERJET.APP - This is an automatic softfont downloader for a Laser Jet printer. It loads either portrait or landscape fonts from a data file.

MENUSYS.APP - Once loaded, you will be presented with the main Menusys screen. Along the top of the screen you will notice four pull-down menus. These are 'Desk', 'Printer', 'Disk' and 'Options'. Each of these menus contain different functions. To select a function move the mouse pointer to one of the menus, the menu will drop down displaying the functions available. To select a function, move the mouse pointer over the function so that it is highlighted then click the left mouse button.

PCXLOADR.APP - LOADS and VIEWS DEGAS ELITE compressed .PC? pictures in either LO or HI res. Run the program and just choose a picture to view. Works well with UIS III.

QCKMNU2S.APP - Quick Menu provides an easy to use system for executing applications. With a single click of the mouse any application may be easily executed without the hassle inherent with the desktop and the typing required by a command line interpreter. High and Medium rez.

RATEHD.APP - RATEHD was written to show

performance characteristics of various hard disk drives. It was developed at ICD to allow fair comparison when evaluating hard disk drive mechanisms, embedded SCSI drives and SCSI controllers when used on the Atari ST.

TWINPRNT.APP - Print almost any ASCII file in two column text mode.

JACGLSEA.239

This is an APPlication Disk

AREACODE.APP - Area Code Locator (Feb. 1991, version) now identifies over 145 telephone area codes in the US and Canada and other countries. It now runs as a desk accessory or program depending on the file extension used (ACC/PRG/TOS). Shareware from Gordon Meyer. MH

DEVPAC 1.APP - Devpac version 1 comes in two parts; the GENST assembler and MONST, the debugger. You can load both of these programs by clicking directly on their icons on the Desktop. GENST is the assembler part of the Devpac development system. From within this program you can write your code and assemble it. The Editor part of the program is just a standard text editor not unlike those you've probably used a thousand times before. You can enter, then edit your code using the cursor keys, backspace etc in the standard manner. MONST is the Devpac monitor/debugger tool that is used to debug your programs to stop them dropping bombs on your desktop.

GSLAM231.APP - The GramSlam Grammar Checker checks documents for incorrect, awkward, or wordy phrases. When it finds a problem in your document, GramSlam describes the problem for you and offers a suggestion for improvement. GramSlam can check document files created by nearly all word processing and text editing packages. This distribution contains a demonstration version of GramSlam. The demonstration version of GramSlam is fully functional and contains all the features found in the registered version of GramSlam. In fact, the demonstration version has an extra feature not found in the registered version: a 10-second delay after every action.

MUSICINV.APP - Music Inventory 3.0 by Larry D. Duke allows you to keep up with your music collection. This program, written in GFA BASIC 3.0 helps you keep an up to date listing of all of your albums, CD's, Tapes, DAT's, 45's, and other media. Full GEM implementation, easy to use. MH

STWEL40.APP - VERSION 4.0 (Changes since 3.6) For users of the MEGA TOS (1.2) and the buggy disk-loaded version of TOS 1.4 (1988), previous versions required you to move the mouse pointer outside of the menu area at the top of the edit screen when pressing the [ESC] key to return to the menu screen. This was done to correct for a GEM bug which drops menus on the mouse, leaving holes

in the menu like swiss cheese. Now, the mouse automatically drops out of the area (does NOT work in combination with Atari's MACCEL2.PRG). Improvements to the form input (from disk file) have been made, and bugs that caused screwy things on wrapping an insert word occurring at the end of a line have been squashed. Support for Moniterm monitor. 160 columns by 57 lines, or 160 by 93 lines in hi-res flip-flop. -4.0 is compatible with ALL resolutions on the TT. -4.0 will now fast-load, and on TT will load into fast TT RAM. -4.0 allows selection of 3 font sizes in TT Med and TT High resolutions, and 2 sizes in ST High and TT Low. -4.0 combines menu screens into one screen. GEM is always active, and alert boxes now work alone as opposed to in parallel with command box alerts.

STWELDOC.APP - This is the full English Manual and Help text for Stwriter Elite 4.0

STWGERSP.APP - This file contains the German & Spanish versions of Stwriter Elite 4.0

JACGLSEA.240

This is an APPlication Disk

ADBASE14.APP - ADBASE is a dedicated address book program for keeping names and numbers. It has a upper limit of 400 addresses and saves it's files in regular ASCII text. ADBASE 1.4 is the latest version of Adbase. Load and save times are dramatically reduced. Several new features including: Adbase can be installed as an application. Quick and easy marking feature, delete with search, and addresses can be cloned for editing. Many bug fixes including better slide bar response. The Dial menu allows for auto-dialing of the Phone # shown in the current address. Update to JACGLSEA.202.

ARTST230.APP - Art-ST 2.30 is a powerful drawing program that operates in low, medium, or high resolution. Not only will you find many of the features expected in a drawing program (such as; Boxes, Circles/Ellipses, Area Fills, Copy & Paste, and Fine Pixel Editing), but Art-ST also explores some rather unique areas of its own! One of the more interesting aspects of Art-ST is that it uses all of your computer's memory to support multiple picture buffers. This can range from approximately eight picture buffers on a 520 ST, to over 110 picture buffers on a Mega ST4! You may also create your own animation sequences using these picture buffers by using Art-ST's built in Slide Show feature. Update to JACGLSEA.224.

CAT3.APP - This Catalogue utility will output to the screen and/or printer or disk a directory of your disks using the file selector dialog box to choose the drive/path/filename. Directories can be added and sorted so as to built a catalogue of your files on all of your disks. MH

CDRAW_IT.APP - COLOR ONLY. The program is a simplified mouse drawing program for ages 4-9. It forms a bridge between even simpler programs like KidGrid and adult paint programs like Degas. Children can work on 5 pictures at once and save them to disk; any pictures on disk are automatically loaded with the program. Includes FILL option, but not PRINT. A slide-show program is also included.

COLORS12.APP - Here it is! The program you've been waiting for! The program that will revolutionize the way you see pictures! Finally, a program that can add up to 496 more colors to your DEGAS, NEOchrome, and TINY pictures! This program loads a picture first, then lets you edit, save, or load another picture. There is a restriction when coloring a picture, you can only have 16 different colors per line (all 16 are displayed at the bottom of the Close-up screen).

MDRAW_IT.APP - MONOCHROME ONLY. Draw_It! is a children's paint program that forms a bridge between very simple graphics design programs like KidGrid and adult paint programs. The monochrome version allows the child to work on five pictures at once and save them to disk; any picture file on disk is automatically loaded with the program. There is a FILL and a PRINT option in this version: the number of fill patterns is limited.

UNCLE35.APP - Uncle Carl's Famous Disk Librarian Version 3.5. (C)1990.91 Carl J. Hafner, ALL RIGHTS RESERVED Manual revised: 4/91 Uncle Carl's Famous Disk Librarian (referred to here-after as UNCLELIB) is a disk catalogueing utility. UNCLELIB will read all directories from either your Floppy or Hard drive, and allow you to save this information to disk in ASCII (American Standard Code for Information Interchange) format. UNCLELIB will also allow you to view this information before deciding to save it. A Print option is available, allowing you to have a printed copy of your directory, and a Disk Formatting option allows you to format a Floppy disk directly from the program.

CAMERAS & PHOTOGRAPHIC EQUIPMENT
Modern Old Antique uNuSuAl

Ben Melton

CAMERA COLLECTOR
STEREOGRAPHER
3711 47th St. Ct., NW
Gig Harbor, WA 98335
April 8, 1991

Jim Chapman, Editor
PSAN
Dear Jim,

Recently I have been playing around with DAISY-DOT III. This is just about the neatest piece of (8-bit) software I have seen.

To support my hobbies of camera collecting and stereo photography, I wanted a letterhead. I won't use enough to justify having some printed, but with my Daisy-Dot III-designed letterhead, I can keep the letterhead on my Atariwriter+ data disk and load it whenever I want to write a letter. Then I simply add the text of the letter, save it in ASCII, and print it with the Daisy-Dot III Print Processor program. As you can see, I can change fonts in the middle of a line, or even in the middle of a word.

Notice the Stereo Realist cameras in the upper corners. I used the Daisy-Dot III Font Utility and simply designed a font that, when printed with zero spacing both horizontally and vertically, will print a Stereo Realist camera. When I type:

\s6\c\fREALIST\ABCDEFGHIJKLMNO

It prints:

When I type: \s0\xv00\c\fREALIST\ABCDE
FGHIJ
KLMNO

It prints:

The Font Utility is easy to use and very useful. I urge 8-bit-oriented readers to try it. You'll like it!

Sincerely,

Ben Melton

GENERAL FEATURE

SAVE THE DOLLAR BILL
A JACG Member Can Do It
by Philip Greenhut JACG

Congress has before it a bill HR 1245 called the Dollar Coin Act of 1991. If enacted, it would eliminate the Dollar Bill. It would mint a new Dollar Coin and try to have the public use it and try to have a widely circulated Two Dollar Bill. What would happen if the politicians failed like they did with a Dollar Coin last time and the metric system?

The Automatic Merchandising Council of New Jersey of which I am a board member has repeatedly voiced its opposition to the elimination of the Dollar Bill mainly because there is no data to support such a move. This elimination will destroy our small vending businesses. On the other hand, NAMA, the national vending organization has spent hundreds of thousands of dollars to get rid of the Dollar Bill.

Is there a newsletter reader who could build a COMPUTER SIMULATION to show what will happen if the Dollar Bill is eliminated using 8 Bit or 16 Bit? And what will happen to the rest of our money system? Will the public accept a Dollar Coin, or will we have another Susan B Anthony fiasco?

Can anyone help with a real good simulation or does anyone have any information on this subject? If anyone wants information on the Dollar Bill in general please feel free to call me.

What we really need is someone who could build a simple (What computer system ever stays simple) computer simulation for what will happen if these changes are made.

Thanks from Phil Greenhut (201) 992-4928 or (201) 992-0332 nights and weekends.

----

8 - BIT FEATURE

A QUESTION FOR A WISE 8 BITTER
by Philip Greenhut, JACG 8 Bit

I have been using the Express Cartridge modem terminal program for several months. I have found several things like no sound to be a disadvantage over the previous disk versions but on balance I have grown to like this Cartridge even if they did delete some of the features from the disk versions.

I do have one problem. They say you can piggy back SpartaDos X. When I do this I found that I cannot access SpartaDos X by pushing number 2 on the Express opening lead in Screen which gives you four choices.

This screen which gives you a choice of the following:

1. Run Express
2. Run Cartridge Above Express
3. Run with internal BASIC
4. Run with all disabled

Does anyone know what I am doing wrong and how I can use SpartaDos X when I am using Express? How can I choose 2 and have SpartaDos X load in? Thanks for your help.

----

8 - BIT FEATURE

THE PROGRAMMER'S WORKSHOP
(Chapter 3)
by Dave Arlington

Once upon a time when I first bought my Atari and got interested in programming it, I devoured every tutorial I could find on all those neat things that only Atari home computers can do. I read tutorials on player-missle graphics, on display list interrupts, on scrolling, on custom display lists, sound, everything. But I never seemd to succeed very well in learning how to do any of them. Player-missle graphics, for instance, seemed the most arcane, impenetrable subject known to man or woman.

Then, one day, I saw the light. I learned something that suddenly opened all those marvelous subjects again for me and made them seem easy to learn and implement. What was this magic source of wisdom that allowed me to master these previously unmasterable subjects? Why, the wonder of hexadecimal numbers, of course! But even those took me awhile to master because of the way they are taught to almost everybody every time.

OK, here is the basics. Hexadecimal numbers are just like the normal numbers we use every day except they are Base 16 numbers rather than Base 10 numbers that we use in every day life. Why do we want to know about them? Well, the computer likes hex numbers better and uses them easier than regular decimal numbers. And I'll prove this to you in a couple paragraphs.

So, come with me on a trip to learn all about hexadecimal numbers. But I promise that it will be different than any other article you have seen about hex numbers. Every other article I have ever seen on the subject of hex numbers always teaches them in the same way. First, there is a big explanation of how computers store numbers. Discussions of binary numbers follow with intricate looks at bits and bytes. The hex number themselves never even come up until most readers are either helplessly bored or helplessly confused. So, here is the first secret of mastering hex numbers. Forget all that stuff about how computers store numbers. Forget about bits and bytes and all that for now. How much of that you'll need to know will be told in this column. And most important of all, forget about trying to translate hex numbers into decimal numbers. That's why I told you to buy a calculator in Chapter 1.

Let's look at regular Base 10 decimal numbers first and then I'll tell you how hex numbers work in comparison. In a regular decimal number, every digit in a number can be one of ten numbers from zero to nine. This is why they are called Base 10 numbers; because you can use one of ten numbers for each digit. That is, a one digit number can range from zero to nine, ten choices. A two digit number can range from 00 to 99. If you add one more, you get 100 and you need three digits to hold the number. Hex numbers are the same except that since they are Base 16 numbers, each digit in a number can be one of 16 choices from zero to fifteen. Now, in regular decimal numbers, the numbers 10 through 15 require two digits, but we only want to use one digit in a hex number, so we use letters to represent those digits instead. A=10, B=11, C=12, D=13, E=14, and F=15. So just as a single digit decimal number can run from 0 to 9, a single digit hex number can run from $0 to $F. A two digit decimal number can range from 00 to 99, a two digit hex number can run from $00 to $FF.

Maybe you noticed those dollar signs in front of the hex numbers. That is the symbol we use when we want to use a hex number so we know when we are using hex numbers and when we are using decimal numbers. So.... $21 is a hex number and 21 is a decimal number. And this is very important: $21 DOES NOT EQUAL 21. 21 means 2 tens and 1 ones whereas $21 means 2 sixteens and 1 ones.

In case you are wondering, every language supported by this column except LOGO accept hex numbers in any statement you can write. (Of course, for BASIC, you have to be using TURBO BASIC or BASIC XL/XE. Regular Atari BASIC does not support hex numbers.)

At this point, we have to talk a little bit about bytes (OUCH! Pun intended!). Ever wonder why a byte (a single memory location in your computer) holds decimal numbers from 0 to 255? Well, here is the first instance where using hex numbers makes understanding your computer a little easier. A single memory location (or byte) is simply a place that can hold

any two-digit hexidecimal number. So, if your computer worked with deimcal numbers, a single byte would hold from 00 to 99. But since you computer likes hex, each memory location can hold any 2-digit hex number from $00 to $FF.

Now, each one of these memory locations (bytes) has a specific address that makes it unique and different from any of its neighbors, just like your home address makes sure only you get your mail. In decimal, the memory addresses range from 0 to 65535, which in decimal doesn't seem to have any rhyme or reason. But when you say the addresses in hex range from $0000 to $FFFF, it becomes a little clearer. Simply put, the 6502 CPU brain in your commmputer has what is called a 2-byte addressing mode. That is, the 6502 knows how to get to any address that can be made up of two bytes pasted together. Since each of the two bytes can hold any number only from $00 to $FF, when you paste two bytes together, you can only get numbers from $0000 ($00 pasted with $00) to $FFFF ($FF pasted to $FF) or anything in between. For example, $3E pasted to $1B gives you address $3E1B.

By the way, $FFFF is 64K of memory. Inherently, the 6502 can only get to 64K at any one time, as we just stated above. Computers like the Atari 130XE and the Commodore 128 which have 128K of memory or more use special tricks to get to the memory outside of the $FFFF range. We'll talk more about that some other time.

Sorry, but before I go further, I have to bring this up again. I know when most people see a "number" like $3E1B, the natural inclination is to either try to figure out what it is in 'regular' numbers or to head screaming for the hills. So, I want to say again that the easiest way to learn hex numbers is just to chill out and accept them for what they are without trying to figure out what they are in decimal. Once you can do that, you'll find you don't even care any more what their decimal equivalent is. (Honestly,

between you and me, when I ever need to know the decimal equivalent of a hexadecimal number I just punch it into the calculator. For instance, it was necessary for this column to find out what $FFFF was in decimal. I can never remember what it is and I had to use the calculator.)

All right, I promised to show you a few examples of how life is easier programming your computer if you can use hex numbers. We've already seen two examples. First, a single memory location can hold any two-digit hex number. Secondly, a memory address is any four-digit hex number. There, now isn't that easier than trying to remember 0 to 255 and 0 to 65535?

Here are some more examples, just off the top of my head. Maybe you've heard somewhere that screen memory cannot cross a 4K boundry without a special display list. (Well, even if you haven't heard it, it's true!) So quick, off the top of your head, give me all the decimal addresses of all the 4K boundries in your computer. Can't do it? I'll bet you can in hex after this issue. Here they are: $0000, $1000, $2000, $3000, $4000, ..., $D000, $E000, $F000. Display lists themselves cannot cross 1K boundries. In decimal, who knows what that means (!) but in hex it just means display lists cannot cross any memory location that ends in these three hex digits: $x000, $x400, $x800, or $xC00. For example, $A400 or $3C00 are both off limits for display lists to cross.

A page of memory? Almost all Atari progammers have heard of that term. What does it mean? In hex, it is very simple. Any memory address that ends in $xx00, like $0600 (Page 6) or $3E00 (Page $3E!) begins a page of memory.

Programming colors is now a snap. No more trying to memorize which number does what in the SETCOLOR statement or using the cumbersome 16 times the hue + the luminance. In hex, it's easy! $42 represents color (or hue) 4, luminance 2. $A0 is color 10 (remember, A=10), luminance 0. $9E is color 9, luminance

14. The sixteens digits (the second digit) holds the color or hue and the ones digit holds the luminance.

There are more examples we are sure to see in the coming months where hex numbers make programming the computer easier. Display list instructions, Player-missile graphics, interrupts, and more, are all easier to understand if we use hex numbers. So, don't be afraid of them, learn to accept them, and get used to them. You will soon see the light like I once did! Next month, back to the program examples as we use our new-found knowledge of hex numbers to tackle custom display lists!

A PROGRAMMER'S WORKSHOP EXTRA
LOGO Style!

(NOTE: This section is included for those either using LOGO or interested in learning a little more about it. Others may feel free to skip right on by.)

Of all the languages this column covers, LOGO is the only one that does not support hexadecimal numbers directly, not counting ATARI BASIC. However, LOGO has one advantage that none of the other languages, including ATARI BASIC, has that lets us get around that lack of support.

What LOGO is that none of the other languages are, is that it is extensible. That is, we can add new commands and words to LOGO that are recognized just as if they were a part of the ROM cartridge. Once we write a function or procedure in LOGO, it instantly becomes accessible to every other function or procedure, including itself, in the LOGO workspace.

We cannot do this in other languages. For instance, we can write subroutines in TURBO BASIC, but we cannot add new TURBO BASIC commands. We can have macros and subroutines in our assembly code, but we cannot add new 6502 instructions. The same goes for C,

Action! and Pascal. We can write functions that are used in many places, but they never actually become a part of the language like a LOGO function or procedure does.

For example, since LOGO does not support hexadecimal numbers directly, we just come up with a command that does and then we can use hex numbers just like the other five languages. If you type in a dollar sign ($) for hex numbers plus a space and then a double quote (") in front of any hex number you can think of (for example, $ "FFFF or $ "3E1B), LOGO will and can use these hex numbers in any operation where a decimal number would have gone.

LOGO PROGRAM ONE

```
TO $ :HEXNUM
IF EMPTYP :HEXNUM [OUTPUT 0]
MAKE "TEMP LAST :HEXNUM
IF :TEMP = "A [MAKE "TEMP 10]
IF :TEMP = "B [MAKE "TEMP 11]
IF :TEMP = "C [MAKE "TEMP 12]
IF :TEMP = "D [MAKE "TEMP 13]
IF :TEMP = "E [MAKE "TEMP 14]
IF :TEMP = "F [MAKE "TEMP 15]
OUTPUT :TEMP + 16 * $ BUTLAST :HEXNUM
END
```

So, for example, after typing that procedure in, PRINT $"FFFF would print 65535 on the screen and .DEPOSIT 710 $ "42 would turn the background color to color 4, luminance 2.

For the next couple months, as we explore the intricacies of fancy Atari graphics capabilities, LOGO will take somewhat of a back seat since it does not allow as much direct control of the computer's internals as the other languages do. However, as you will see later on, this feature of extensibility and its recursive capabilities will let LOGO really strut its stuff in future columns.

(EDITOR'S NOTE: Here are the two sample programs that were left out of last month's newsletter.)

SAMPLE PROGRAM 3

```
0100      .OPT OBJ
0110      *=  $6000
0120 MAIN LDA #5
0130      STA NUM
0140      JSR COUNTUP
0150 END BRK
0160 ;RECURSIVE SUBROUTINE GOES HERE
0170 COUNTUP LDA NUM
0180      CMP #1
0190      BEQ ENDRC
0200      PHA
0210      TAX          ;Can't decrement
0220      DEX          ;A register!
0230      STX NUM
0240      JSR COUNTUP
0250      PLA
0260 ENDRC STA DEST
0270      RTS
0280 NUM .DS 1
0290 DEST .DS 1
```

SAMPLE PROGRAM 4

```
;Caution Kids! Don't try this at home!

DEFINE LDA="$A5", PHA="$48",
       PLA="$68", STA="$85"

BYTE num=$CB

PROC Countup()

   IF num > 1 THEN
     ;First, save the local variable
     [LDA $CB PHA]

     ;Call the recursive procedure
     num==-1
     Countup()

     ;Get the local variable back again
     [PLA STA $CB]
   FI
   PrintBE(num)
RETURN

PROC main()

   num=7
   Countup()
RETURN
```

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